

5 WHAT IS CLAIMED IS:

1. A process for fabricating a snack product comprising

providing a dough sheet;

10 cutting a dough piece and a web scrap in the dough sheet; and

separating the dough piece from the web scrap by directing a pressurized gas at the dough piece while moving the web scrap at an angle relative to the dough piece.

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2. The process of claim 1 wherein the cutting step comprises pressing a stepped cutting edge against the dough sheet.

20 3. The process of claim 2 wherein the dough comprises a first dough layer and a second dough layer, and the stepped cutting edge forms the dough piece with a sealed edge.

25 4. The process of claim 3 further comprising cooking the dough piece following the separating step to form a sealed chamber bounded by the sealed edge.

30 5. The process of claim 4 wherein the separating step further comprises moving the dough piece away from the web scrap.

6. A process for fabricating a snack product comprising:

35 providing a dough sheet;

- 5 providing a cutter mechanism comprising a cutting
segment having a continuous shaped cutting edge;
 pressing the cutting edge against the dough sheet to
form a dough piece retained by the cutter segment and a web
scrap;
- 10 directing a pressurized gas at the dough piece to
discharge the dough piece from the cutter segment; and
 moving the web scrap at an angle to the dough piece
during the directing step.
- 15 7. The process of claim 6 wherein the cutter
mechanism comprises a rotating cylindrical member
comprising a ring having the cutting edge formed on an
outside surface thereof.
- 20 8. The process of claim 6 wherein the shaped cutting
edge includes a stepped surface.
9. The process of claim 6 wherein the cutter
mechanism includes a gas conduit, and a gas port in the
25 cutting segment in flow communication with the gas conduit,
the gas conduit and the gas port configured to perform the
directing step.
10. The process of claim 6 further comprising moving
30 the dough piece away from the cutter mechanism during the
directing step.
11. The process of claim 6 further comprising
following the directing step, performing a cleaning step by
35 directing the pressurized gas into the cutter segment.

5 12. The process of claim 6 further comprising
following the directing step brushing the cutting segment.

13. The process of claim 6 wherein the cutter
mechanism comprises a plurality of cutting segments having
10 a plurality of common cutting edges.

14. A process for fabricating a snack product
comprising:

15 providing a dough sheet having a first layer and a
second layer;

cutting the dough sheet into a web scrap having an
opening and a dough piece in the opening having a
continuous crimped edge;

20 separating the dough piece from the web scrap by
directing a pressurized gas at the dough piece while moving
the dough piece and moving the web scrap with a selected
orientation relative to the dough piece; and

25 cooking the dough piece to expand a center portion of
the dough piece into a hollow chamber bounded by the
crimped edge and by portions of the first layer and the
second layer.

15. The process of claim 14 wherein the cutting step
is performed using a stepped cutting edge.

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16. The process of claim 14 wherein the dough piece
includes a plurality of features proximate to the crimped
edge.

35 17. The process of claim 14 wherein the cooking step
comprises frying.

18. The process of claim 14 wherein the crimped edge has a thickness less than that of the dough sheet.

19. The process of claim 14 wherein the cutting step
10 is performed using a rotating cylindrical cutter mechanism having a plurality of cutting segments for forming the dough piece and the web scrap.

20. The process of claim 14 wherein the first layer
15 and the second layer comprise potato flakes.

21. A system for fabricating a snack product comprising:

a rotatable cutter mechanism comprising a plurality of
20 shaped blades configured to cut a dough sheet into a web scrap having openings and a plurality of dough pieces in the openings;

a gas discharge system configured to direct separate gas streams at the dough pieces at a selected position of
25 the cutter mechanism; and

a web scrap conveyor configured to move and orient the web scrap at a selected angle, as the gas streams are directed at the dough pieces.

22. The system of claim 21 wherein the selected
30 position is between about 275° to 285° measured from 0° located at a three o'clock point of the cutter mechanism.

23. The system of claim 22 wherein the selected angle
35 is from about 5° to 75° measured from a horizontal plane.

5 24. The system of claim 23 wherein the cutter mechanism includes a cylindrical mandrel and at least one ring attached to the mandrel having the shaped blades on an outside surface thereof.

10 25. The system of claim 24 wherein the ring includes a gas discharge conduit located generally parallel to a longitudinal axis of the cutter mechanism and a gas port in flow communication with the gas discharge conduit.

15 26. The system of claim 25 wherein the shaped blades have stepped cutting edges configured to compress edges of the dough pieces.

20 27. A system for fabricating a shaped snack product comprising:

 a cutter mechanism comprising a plurality of cutting segments comprising shaped blades having cutting edges configured to cut a dough sheet into a plurality of dough pieces and a web scrap;

25 a gas discharge system configured to direct separate gas streams at the dough pieces contained in the cutting segments; and

 a web scrap mechanism configured to move the web scrap at an angle relative to the dough pieces, as the gas
30 streams are directed at the dough pieces held in the cutting segments.

 28. The system of claim 27 wherein the cutter mechanism comprises a rotatable cylindrical mandrel and a
35 ring on the mandrel having the cutting segments formed on an outside surface thereof.

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29. The system of claim 27 wherein the cutter mechanism includes a gas conduit and a plurality of gas ports in flow communication with the gas conduits configured to direct the gas streams at the dough pieces.

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30. The system of claim 27 wherein the cutting edges are stepped surfaces configured to compress peripheral edges of the dough pieces.

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31. The system of claim 27 wherein the web scrap mechanism comprises a conveyor spaced from the cutter mechanism and positioned at the angle.

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32. The system of claim 27 wherein the angle is from about 5° to 75° measured from a horizontal plane.

33. The system of claim 27 wherein the dough sheet includes a first dough layer and a second dough layer.

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34. The system of claim 27 further comprising a rotatable brush configured to brush the cutter mechanism.

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35. The system of claim 27 further comprising a cooking system configured to cook the dough pieces.

36. The system of claim 27 further comprising a mixing system configured to mix ingredients for the dough sheet.

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37. The system of claim 27 further comprising a sheeting system configured to form the dough sheet.

5 38. The system of claim 27 further comprising a
packaging system configured to package the dough pieces
following cooking thereof.

10 39. A system for fabricating a shaped snack product
comprising:

 a cutter mechanism comprising a rotatable cylindrical
mandrel having a longitudinal axis and at least one ring
attached to the mandrel, the ring comprising a plurality of
shaped blades on an outside surface thereof configured to
15 cut a dough sheet into a web scrap and a plurality of dough
pieces;

 the ring further comprising a plurality of gas
discharge conduits comprising openings therein positioned
generally parallel to the longitudinal axis, and a
20 plurality of gas ports in flow communication with the gas
discharge conduits configured to direct a pressurized gas
at the dough pieces at a selected position of the cutter
mechanism; and

 a web scrap mechanism configured to move the web scrap
25 at an angle relative to the dough pieces, as the gas
streams are directed at the dough pieces.

 40. The system of claim 39 wherein the mandrel
comprises a metal and the ring comprises a plastic or a
30 metal.

 41. The system of claim 39 further comprising a key
attaching the ring to the mandrel.

35 42. The system of claim 39 further comprising a gas
conduit plate attached to the mandrel having a plurality of

5 gas openings in flow communication with the gas discharge conduits, and a gas port plate in flow communication with a gas supply having a discharge port configured to align with the gas openings as the cutter mechanism rotates.

10 43. The system of claim 42 wherein the gas port plate includes a clean out port in flow communication with the gas supply configured to align with the gas openings as the cutter mechanism rotates.

15 44. The system of claim 39 further comprising a rotatable back up roller configured to press the dough sheet into the cutter mechanism.

20 45. The system of claim 39 further comprising a rotatable brush configured to brush the dough pieces or portions thereof from the cutter mechanism.

25 46. The system of claim 39 wherein the web scrap mechanism comprises a conveyor having a conveyor belt spaced from the cutter mechanism and positioned at the angle.

30 47. The system of claim 46 wherein the conveyor is movable from a first position to a second position for changing the angle and a spacing of the conveyor from the cutter mechanism.

48. A shaped snack product comprising:
a first cooked dough layer and a second cooked dough layer;
35 a shaped peripheral edge comprising a first portion of the first cooked dough layer and a second portion of the second cooked dough layer compressed together;

5 a chamber having a hollow interior and bounded by the
shaped peripheral edge; and

 a middle portion comprising a first curved surface
comprising the first cooked dough layer and a second curved
surface comprising the second cooked dough layer.

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 49. The snack product of claim 48 wherein an edge
thickness of the shaped peripheral edge is equal to or less
than a combined thickness of the first cooked dough layer
and the second cooked dough layer.

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 50. The snack product of claim 49 further comprising
a plurality of features proximate to the peripheral edge
comprised at least in part of the first portion and the
second portion.

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 51. The snack product of claim 50 wherein the
peripheral edge defines a shape of the snack product and
forms a support structure for the features.

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